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THE EFFECT OF AUDIT AND FEEDBACK BASED CLINICAL SUPERVISION PROGRAMS ON NURSING CARE QUALITY AND PATIENT SATISFACTION IN HOSPITALS: A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT
Clinical supervision structured around audit and feedback (A&F) is increasingly used to close evidence–practice gaps, but its effects on nursing care quality and patient satisfaction in hospitals have not been synthesized. To synthesize evidence on the effect of A&F-based clinical supervision programs on nursing care quality and patient satisfaction in hospitals. Following PRISMA 2020, PubMed, SpringerLink, ScienceDirect, and Google Scholar were searched for studies published in 2021–2026. Of 1,031 records, 12 non-randomized intervention studies were included. Quality was appraised with the JBI checklist and risk of bias with ROBINS-I. All 12 studies reported improved nursing care quality, mainly compliance with evidence-based standards, documentation, and competency; seven reported better safety outcomes, and all six measuring patient satisfaction showed gains. Risk of bias was moderate in two studies and serious in ten. A&F-based supervision is a promising strategy for improving hospital nursing quality and patient satisfaction, but controlled multicenter trials are needed.

Keywords: audit and feedback; clinical supervision; hospital; nursing care quality; patient satisfaction

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INTRODUCTION

Safe, high-quality nursing care is a core determinant of hospital performance, patient experience, and accreditation, yet a persistent gap remains between recommended standards and bedside practice. In a Tunisian university hospital, surgical safety checklist compliance peaked at 60% during implementation but fell to 29.4% at follow-up (Aouicha et al., 2026); in Portugal, only 6.3% of nurses fully complied with the radial hemostasis protocol (Rodrigues et al., 2026) ; and in India, high self-reported hand hygiene adherence concealed substantial operational barriers (Baraiya et al., 2026). Standards, training, and self-assessment alone therefore rarely sustain practice change; nurses need a structured system that makes performance visible and turns data into corrective action.

Clinical supervision is a key managerial mechanism for such a system, with normative (quality assurance), formative (learning), and restorative (support) functions. Recent evidence, however, has focused mainly on its restorative and educational effects, such as improved well-being of nurse unit managers (Jarden et al., 2026), better decision-making among nursing interns (Gheisari et al., 2025), and greater clinical competence (Serapelwane et al., 2025), while one supervision model failed to improve nurses' job satisfaction (Rocha et al., 2021). In daily practice, supervision remains largely didactic, with limited use of structured feedback (Rodrigues et al., 2026), constrained by

staff shortages and limited supervisory training (Raliphaswa et al., 2026), and its effectiveness is difficult to measure (Friis et al., 2027).

Audit and feedback (A&F) offers a concrete way to operationalize the normative function of supervision by measuring performance against explicit criteria and returning the results to clinicians with an action plan. The latest Cochrane review of 292 trials reported a mean absolute improvement of 6.2% in desired practice, with larger effects when baseline performance was low, when feedback came from a local champion, and when action plans were included (Ivers et al., 2025). A&F also tends to be cost-effective (Moore et al., 2022), although effects vary across behaviors (Badejo et al., 2024). However, 81% of the Cochrane trials targeted physicians (Ivers et al., 2025), and in nursing A&F is increasingly embedded in JBI evidence implementation cycles (Lockwood et al., 2026) whose effects on patient-reported outcomes have not been synthesized. Therefore, this review aimed to synthesize evidence from 2021 to 2026 on the effect of A&F-based clinical supervision programs on nursing care quality and patient satisfaction in hospitals, appraise the quality and risk of bias of the evidence, and identify research gaps.

METHOD

Study Design (Literature Review)

This systematic literature review of primary intervention studies was reported according to the PRISMA 2020 statement (Page et al., 2021). Literature reviews, narrative reviews, and scoping reviews were excluded as data sources so that conclusions rest on primary evidence only.

PICO and Search Strategy

The review question followed the PICO framework (Table 1): among hospital nurses and their patients (P), does an A&F-based clinical supervision program (I), compared with routine supervision, usual care, or the pre-intervention period (C), improve nursing care quality and patient satisfaction (O)? PubMed, SpringerLink (Springer Nature Link), ScienceDirect, and Google Scholar were searched for articles published from January 2021 to October 2026, combining MeSH terms and free-text keywords with the Boolean operators AND and OR, adapted to each database.

Table 1.
PICO Framework and Search Strategy

Component	Description	Keywords / MeSH terms
P (Population)	Nurses working in hospital settings and the patients they care for	nurses, nursing staff, hospital, inpatients
I (Intervention)	Clinical supervision program based on audit and feedback (on-site, supportive, or JBI audit cycle)	clinical supervision, nursing supervision, supportive supervision, audit and feedback, clinical audit
C (Comparison)	Routine supervision, usual care, or the pre-intervention period	usual care, pre-intervention, historical control
O (Outcome)	Nursing care quality (compliance, competency, documentation, adverse events) and patient satisfaction	quality of nursing care, compliance, adherence, patient safety, patient satisfaction

Search String

The literature search was conducted in four databases using search strings adapted to each database's syntax. In PubMed, the terms "clinical supervision," "nursing supervision," "audit and feedback," and "clinical audit" [tiab] were combined with nurse [tiab] or "Nursing Staff, Hospital" [MeSH], with "Quality of Health Care" [MeSH], compliance, or "Patient Satisfaction" [MeSH], and with hospital. Results were limited to English-language articles published in 2021–2026, yielding 155 records. In SpringerLink, the string ("audit and feedback" OR "clinical supervision") AND nurs* AND hospital AND ("quality of nursing care" OR "patient satisfaction") was applied to articles published in 2021–2026, yielding 167 records. In ScienceDirect, ("audit and feedback" OR "clinical supervision" OR "nursing supervision") AND nursing AND hospital AND ("quality of

care" OR "patient satisfaction") was applied to research articles from 2021–2026, yielding 102 records. In Google Scholar, the terms "audit and feedback" OR "clinical supervision" were combined with nurses, hospital, "quality of nursing care," and "patient satisfaction" over a custom range of 2021–2026, yielding 607 records. In total, 1,031 records were identified.

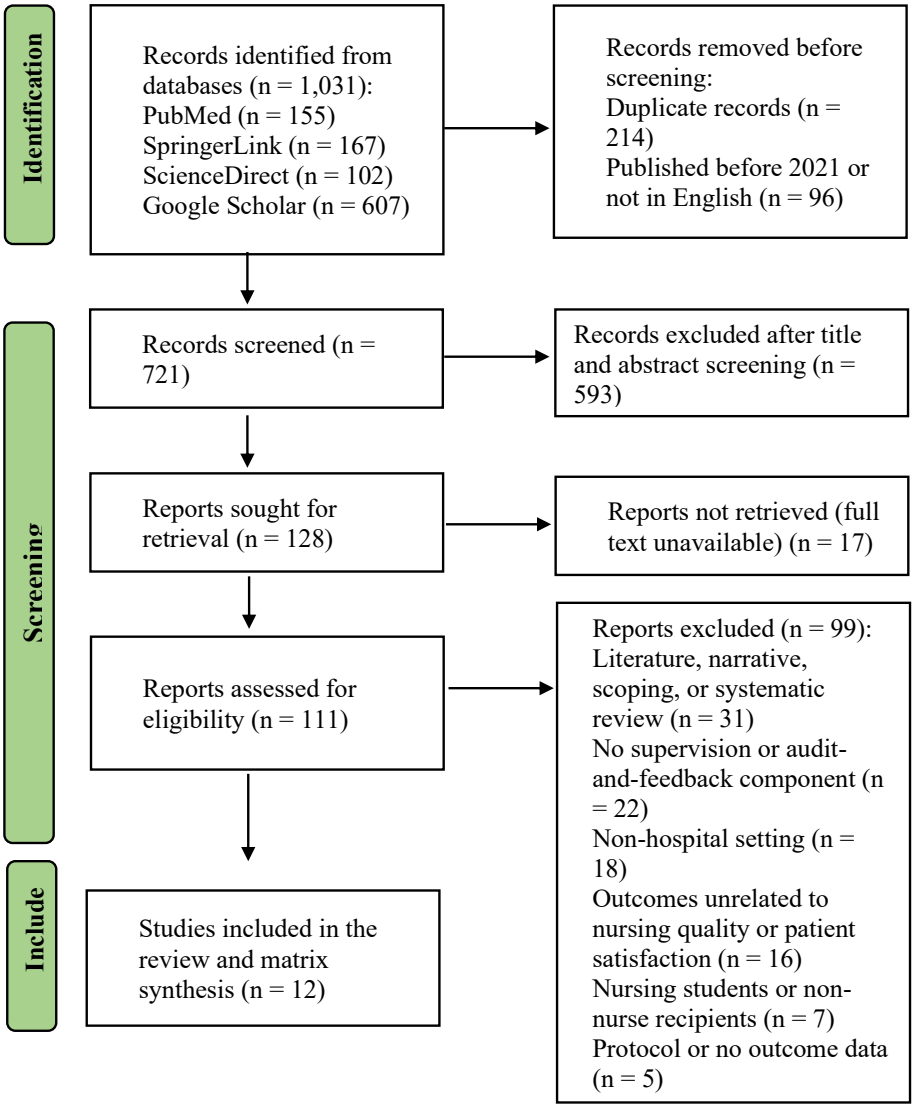


Figure 1. PRISMA 2020 Flow Diagram of Study Selection

Inclusion and Exclusion Criteria

Studies were included if they (a) were primary quantitative intervention studies (quasi-experimental, pre–post, historical-control, or quality improvement/best practice implementation designs with baseline and follow-up measurements); (b) were conducted in hospitals; (c) evaluated a supervision program for nurses that included a structured audit of practice and feedback of results; (d) reported nursing care quality (compliance, performance or competency, documentation, or nursing-sensitive adverse events) and/or patient satisfaction; and (e) were published in English in 2021–2026 with full text available. Literature, narrative, scoping, and other review designs; protocols, editorials, and abstracts; cross-sectional or qualitative studies without an intervention; non-hospital settings; and studies of nursing students only were excluded.

Study Selection and PRISMA 2020 Flow Diagram

After duplicates were removed, titles and abstracts were screened, followed by full-text assessment; reasons for exclusion were recorded (Figure 1). Data were extracted into a standardized matrix

covering author and year, title, country, aim, concepts and variables, methods and sample, main findings, and research gap (Table 2).

Quality Assessment (JBI)

Methodological quality was appraised with the nine-item JBI critical appraisal checklist for quasi-experimental studies (Barker et al., 2024). Items were rated yes, no, or unclear, and studies were classified as high (≥ 70% "yes"), moderate (50%–69%), or low (< 50%) quality; ratings informed interpretation rather than exclusion.

Risk Of Bias

Risk of bias was assessed with ROBINS-I across seven domains (confounding, selection of participants, classification of interventions, deviations from intended interventions, missing data, measurement of outcomes, and selection of the reported result), with the overall judgment equal to the most severe domain; decision rules were agreed in advance because ROBINS-I judgments vary across reviewers (Saadi et al., 2024). Because interventions and outcomes were heterogeneous, findings were synthesized narratively by theme.

RESULT

Study Selection and Characteristics

The search yielded 1,031 records. After removal of 214 duplicates and 96 ineligible records, 721 were screened and 593 excluded; 17 of 128 reports could not be retrieved, and 99 of 111 full texts were excluded, mainly for review designs (n = 31) or no supervision or A&F component (n = 22). Twelve studies were included (Figure 1; Table 2), published in 2022–2026 in China (n = 7), Iran (n = 2), India, Singapore, and Australia (n = 1 each). Five were JBI evidence implementation projects (Lai et al., 2024; Liu et al., 2026; See & Goh, 2026; Tayebi et al., 2026; L. Zhang et al., 2022), three were quality improvement studies using run or control charts (Deorari et al., 2022; Innes et al., 2026; Zhou et al., 2026), two were quasi-experimental pre–post studies (Li et al., 2026; Mokhtari et al., 2022), one was a before-and-after study (X. Zhang et al., 2022), and one used a historical control (Wang et al., 2026). Samples ranged from 17 nurses to 70 hospitals and 13,821 neonates, and critical care units were the most common setting.

Table 3.
Methodological Quality of Included Studies (JBI Critical Appraisal Checklist for Quasi-Experimental Studies)

Study	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Score	%	Quality
Deorari et al. (2022)	Y	Y	U	N	Y	Y	Y	Y	Y	7/9	78	High
Mokhtari et al. (2022)	Y	Y	U	N	N	Y	Y	Y	Y	6/9	67	Moderate
L. Zhang et al. (2022)	Y	U	U	N	N	Y	Y	Y	Y	5/9	56	Moderate
X. Zhang et al. (2022)	Y	Y	U	N	N	Y	Y	Y	Y	6/9	67	Moderate
Lai et al. (2024)	Y	Y	U	N	Y	U	Y	Y	Y	6/9	67	Moderate
Innes et al. (2026)	Y	U	U	N	Y	Y	Y	Y	Y	6/9	67	Moderate
Li et al. (2026)	Y	U	U	N	N	Y	Y	Y	Y	5/9	56	Moderate
Liu et al. (2026)	Y	Y	U	N	N	Y	Y	Y	Y	6/9	67	Moderate
See and Goh (2026)	Y	U	U	N	Y	Y	Y	Y	Y	6/9	67	Moderate
Tayebi et al. (2026)	Y	U	U	N	N	Y	Y	Y	Y	5/9	56	Moderate
Wang et al. (2026)	Y	Y	N	Y	N	Y	Y	Y	Y	7/9	78	High
Zhou et al. (2026)	Y	U	U	N	Y	Y	Y	Y	Y	6/9	67	Moderate

Note. Q1 = clear cause and effect; Q2 = similar participants in comparisons; Q3 = similar treatment other than the intervention; Q4 = control group; Q5 = multiple pre- and post-intervention measurements; Q6 = complete follow-up or differences adequately described; Q7 = outcomes measured in the same way; Q8 = outcomes measured reliably; Q9 = appropriate statistical analysis. Y = yes; N = no; U = unclear. Quality: high ≥ 70%, moderate 50%–69%, low < 50%.

Methodological Quality and Risk of Bias (ROBINS-I)

JBI scores ranged from 56% to 78% (Table 3): two studies were of high quality (Deorari et al., 2022; Wang et al., 2026) and 10 of moderate quality. The most common weakness was the absence of a control group (11 of 12 studies). ROBINS-I rated two studies at moderate (Deorari et al., 2022; Liu et al., 2026) and 10 at serious overall risk of bias (Figure 2), driven mainly by confounding in uncontrolled pre–post designs and by unblinded or unadjusted outcome measurement (Li et al., 2026; Mokhtari et al., 2022).

Figure 2

Risk of Bias of Included Studies (ROBINS-I Traffic-Light Plot)



Note. D1 = bias due to confounding; D2 = selection of participants; D3 = classification of interventions; D4 = deviations from intended interventions; D5 = missing data; D6 = measurement of outcomes; D7 = selection of the reported result. Cells are color-coded and can be edited directly in Word.

Figure 2. Risk of Bias of Included Studies (ROBINS-I Traffic-Light Plot)

Effect on Nursing Care Quality

All 12 studies reported improvement in at least one nursing quality indicator, with the largest gains where baseline compliance was very low: continence-promotion compliance rose from 0% to 69.4% (See & Goh, 2026), and anorexia–cachexia care criteria from 0% to 76.6%–100% (L. Zhang et al., 2022). In critical care, adherence to arterial catheter standards rose from 57.0% to 74.3% (Zhou et al., 2026), delirium-screening documentation from 26.5% to 65.9% (Innes et al., 2026), and nurses' performance in atrial fibrillation care improved in all dimensions (Mokhtari et al., 2022). On-site supervision with closed-loop feedback increased aseptic compliance from 83.80% to 91.86% (Li et al., 2026), and A&F-based aspiration prevention raised feeding-plan compliance from 41.58% to 77.67% (Liu et al., 2026). Gains were also achieved across 70 hospitals (Lai et al., 2024), in patient education (Tayebi et al., 2026), and in neonatal oxygen and antibiotic stewardship (Deorari et al., 2022).

Effect on Patient Safety and Patient Satisfaction

Seven studies reported safety outcomes. Aspiration fell from 27.72% to 13.59% (aOR = 0.359; Liu et al., 2026), incontinence-associated dermatitis from 7.0% to 2.8% (See & Goh, 2026), catheter occlusion from 43.5% to 4.3% with hospital stay shortened from 19 to 11 days (Wang et al., 2026), and adverse events from 559 to 398 per year (Li et al., 2026); catheter complications and chemotherapy safety also improved (Lai et al., 2024; Zhou et al., 2026), whereas neonatal survival did not change (Deorari et al., 2022). All six studies measuring patient satisfaction reported improvement (Lai et al., 2024; Li et al., 2026; Liu et al., 2026; Wang et al., 2026; L. Zhang et al., 2022; X. Zhang et al., 2022). The largest gain was from 80.35 to 92.16 (Liu et al., 2026), whereas gains were small where baseline scores exceeded 90 (Li et al., 2026; Wang et al., 2026). Effective programs shared five components: explicit audit criteria, baseline barrier analysis, structured feedback, supervisory structures such as on-site teams or nurse champions (Innes et al., 2026; Li et al., 2026), and system supports such as checklists and electronic decision support (Zhou et al., 2026).

Table 2
Matrix of Journal Search Results (n = 12)

No	Author (Year)	Article Title	Country	Aim	Concepts / Variables	Methods and Sample	Main Findings	Research Gap
1	Deorari et al. (2022)	Improving the quality of health care in special neonatal care units of India: A before and after intervention study	India	To evaluate point-of-care quality improvement (POCQI) training plus a preterm care package, followed by remote mentoring and supportive supervision, on care practices and neonatal outcomes.	IV: POCQI training, remote mentoring, supportive supervision with PDSA cycles. DV: care practices (oxygen, antibiotics, enteral feeding), survival.	Pre–post quality improvement study; 3 special neonatal care units; 156 health care workers; 13,821 neonates; 24 months.	Oxygen use fell (36.1% vs. 48.0%; aOR = 0.60) and antibiotic use fell (29.4% vs. 39.0%; aOR = 0.76); enteral feeds started earlier; no effect on survival (aOR = 0.93).	No concurrent control; patient/family satisfaction and nurse-specific outcomes not measured.
2	Mokhtari et al. (2022)	The effect of the clinical supervision model on nurses' performance in atrial fibrillation care	Iran	To evaluate the effect of a clinical supervision model on nurses' performance in atrial fibrillation (AF) care in a coronary care unit.	IV: clinical supervision model (education, observation, feedback). DV: nurses' performance (care, pharmacologic, electrical cardioversion).	Quasi-experimental single-group pretest–posttest; 36 CCU nurses (stratified random sampling); 44-item performance checklist.	Performance scores in all dimensions increased significantly after supervision ($p < .001$), from about 63–69 to 83–85 points.	No control group; patient outcomes and satisfaction not assessed.
3	L. Zhang et al. (2022)	Assessment and nonpharmacological management for patients with cancer anorexia-cachexia	China	To implement evidence-based assessment and nonpharmacological management of cancer	IV: JBI audit and feedback (PACES, GRiP), staff training, electronic reminders. DV: compliance	Three-phase JBI pre–post audit; radiation oncology department; 30 patients per audit cycle.	Compliance rose from 0% to 100% (criterion 3), 0% to 76.6% (criterion 4), and 23% to 70% (criterion 5); nursing quality and patient	Small single-unit sample; satisfaction reported descriptively; sustainability

No	Author (Year)	Article Title	Country	Aim	Concepts / Variables	Methods and Sample	Main Findings	Research Gap
		syndrome: A best practice implementation project		anorexia–cachexia syndrome and improve compliance and quality of life.	with 7 criteria, nursing quality, patient satisfaction.		satisfaction improved.	untested.
4	X. Zhang et al. (2022)	Implementation strategies to improve evidence-based practice for post-stroke dysphagia identification and management: A before-and-after study	China	To determine the effect of tailored, multifaceted strategies on evidence-based post-stroke dysphagia identification and management.	IV: training, policy, and audit-and-feedback interventions (Knowledge-to-Action framework). DV: nurses' knowledge and adherence; patients' quality of life and satisfaction.	Before-and-after study; community hospital; 17 registered nurses; 55 patients (28 pre, 27 post); 5-month implementation.	Significant improvements in nurses' knowledge and adherence and in patients' quality of life and satisfaction after implementation.	Very small sample; different patient cohorts before and after; long-term sustainability unknown.
5	Lai et al. (2024)	Pre-treatment assessment of chemotherapy for cancer patients: A multi-site evidence implementation project of 74 hospitals in China	China	To standardize pre-chemotherapy assessment and improve nurses' adherence through a national multisite evidence implementation project.	IV: JBI implementation with training, baseline audit, two follow-up audits, and online feedback. DV: compliance, chemotherapy safety, patient satisfaction.	Multisite pre–post audit; 74 hospitals in 32 cities (70 completed); seven phases including a sustainability assessment.	Compliance with pre-chemotherapy assessment improved significantly; patient satisfaction and chemotherapy safety improved; nurses' belief in evidence-based practice increased.	No control hospitals; hospital-level heterogeneity not modeled; four sites withdrew.
6	Innes et al. (2026)	Increasing the visibility of delirium as a hospital acquired complication: A consumer co-designed, nurse-led quality improvement program in a quaternary intensive care unit	Australia	To increase the visibility of delirium through reliable screening, explicit documentation, and family engagement.	IV: nurse-led QI with delirium champions, education, bedside prompts, and iterative audit and feedback. DV: CAM-ICU documentation, delirium documentation, family engagement.	Before-and-after QI with run charts and statistical process control p-charts; 48-bed adult ICU.	Shifts meeting CAM-ICU documentation requirements rose from 26.5% to 65.9% ($p < .001$); nursing documentation of nonpharmacological strategies rose from 29.7% to 74%.	Process measures only; delirium incidence and patient/family satisfaction not tested against a control.
7	Li et al. (2026)	Improving nursing quality	China	To develop and evaluate a Structure–	IV: "1 + 1 + X" supervision	Pre–post quasi-experiment	Aseptic technique compliance	Non-matched cohorts;

No	Author (Year)	Article Title	Country	Aim	Concepts / Variables	Methods and Sample	Main Findings	Research Gap
		through on-site supervision: A process management intervention guided by the Structure-Process-Outcome model		Process–Outcome (SPO)-based on-site supervision program and its effect on compliance, competency, satisfaction, and adverse events.	team, formative checklist evaluation, closed-loop feedback. DV: nursing compliance, skill scores, patient satisfaction, adverse events.	with independent annual cohorts (2024 vs. 2025); tertiary hospital; 194 nurses and 155 patients.	83.80% → 91.86%; skill scores 91.80 → 93.65; patient satisfaction 95.86 → 97.44 (p < .05); adverse events 559 → 398 (unadjusted counts).	adverse events not adjusted for activity volume; ceiling effect in satisfaction scores.
8	Liu et al. (2026)	Implementing standardized, evidence-based nursing management to prevent aspiration risk in hospitalized older adults	China	To implement a standardized evidence-based aspiration-prevention program and evaluate knowledge, adherence, aspiration incidence, and satisfaction.	IV: JBI PACES audit and feedback, Ottawa Model barrier analysis, 22 audit criteria. DV: audit adherence, nurses' knowledge, aspiration incidence, satisfaction.	Pre–post audit-and-feedback design (SQUIRE 2.0); tertiary hospital; July 2024–December 2025; logistic regression adjusted for confounders.	Aspiration 27.72% → 13.59% (aOR = 0.359); knowledge 56.72 → 85.03; feeding-plan compliance 41.58% → 77.67%; satisfaction 80.35 → 92.16 (p < .001).	Pre–post design limits causal inference; multicenter replication and long-term sustainability needed.
9	See & Goh (2026)	Promoting diaper weaning to prevent diaper-related complications in adult inpatients: A best practice implementation project	Singapore	To achieve 80% nursing compliance with continence-promotion strategies and a 50% reduction in diaper-related complications.	IV: JBI audit and feedback (PACES, GRiP), nurse-led screening, scheduled toileting, patient education. DV: compliance, incontinence-associated dermatitis.	Best practice implementation project; 4 medical wards of a public university hospital; baseline and three follow-up audits over 21 months.	Compliance increased from 0% to 69.4% (p < .001); incontinence-associated dermatitis fell from 7.0% to 2.8%.	80% target not reached; patient-reported dignity and satisfaction not measured.
10	Tayebi et al. (2026)	Improving patient education on urethral catheter care among patients discharged with an indwelling urinary catheter: A multi-center best practice implementation project	Iran	To improve patient education on indwelling urinary catheter self-management in two hospitals.	IV: JBI audit and feedback, standardized education checklist, staff training, nurse-led follow-up. DV: compliance with 12 audit criteria.	Multicenter pre–post audit; urology wards of 2 hospitals; 61 patients.	At baseline only 3 of 12 criteria exceeded 70% compliance; after implementation most criteria exceeded 85%.	Criteria applied unevenly across sites; clinical outcomes and patient satisfaction not measured.

No	Author (Year)	Article Title	Country	Aim	Concepts / Variables	Methods and Sample	Main Findings	Research Gap
11	Wang et al. (2026)	Effectiveness of a multicomponent PDCA-based infusion safety management strategy in patients with pulmonary tuberculosis: A non-randomized historical-control study	China	To evaluate a multicomponent PDCA-based infusion safety strategy on peripheral intravenous (PIV) outcomes.	IV: PDCA quality improvement, staff training, standardized protocols, audit and feedback, two auxiliary devices. DV: PIV complications, dwell time, length of stay, satisfaction.	Non-randomized historical-control study; 92 adults undergoing thoracic surgery (46 intervention vs. 46 historical controls).	Erythema/tenderness 69.6% → 8.7% (RR = 0.13); occlusion 43.5% → 4.3%; length of stay 19 → 11 days; satisfaction 91.5 → 95.0 ($p < .001$).	Contribution of audit and feedback cannot be separated from the devices; historical controls.
12	Zhou et al. (2026)	Improving peripheral arterial catheter placement in critically ill children: A pre-post quality improvement study	China	To improve the quality and safety of peripheral arterial catheterization in a pediatric intensive care unit.	IV: structured audit and feedback on 12 criteria, checklists, ultrasound training, electronic decision support, competency assessment. DV: nursing adherence, first-attempt success, complications	Three-phase pre–post QI; PICU; 121, 76, and 63 patients (375 catheterizations); statistical process control charts.	Overall nursing adherence 57.0% → 74.3% ($p < .001$); assessment adherence 69.4% → 88.9%; complications trended downward ($\tau = -0.432$); first-attempt success unchanged.	Uncontrolled design; patient and family satisfaction not measured.

Note. IV = independent variable; DV = dependent variable; QI = quality improvement; JBI = Joanna Briggs Institute; PACES = Practical Application of Clinical Evidence System; GRiP = Getting Research into Practice; PDSA/PDCA = Plan-Do-Study/Check-Act; aOR = adjusted odds ratio; RR = risk ratio; CCU = coronary care unit; ICU = intensive care unit; PICU = pediatric intensive care unit

DISCUSSION

This review synthesized 12 non-randomized intervention studies and found that audit-and-feedback (A&F)-based clinical supervision was consistently associated with improvement in at least one indicator of nursing care quality. All six studies that measured patient satisfaction also reported improvement. These findings are compatible with the broader evidence that A&F can improve professional practice (Ivers et al., 2025), while extending the discussion to nurse-led supervision in hospital settings. Nevertheless, consistency of direction should not be confused with certainty of effect. Ten studies were judged to have serious overall risk of bias, and most lacked concurrent control groups.

Improvements in nursing care quality were most apparent in adherence to explicit standards, documentation, and task-specific competence. Particularly large increases were observed where baseline practice was weak: continence-promotion compliance increased from 0% to 69.4% (See & Goh, 2026), while several anorexia–cachexia care criteria improved from 0% to 76.6%–100% (L. Zhang et al., 2022). These results suggest that clearly defined expectations and regular performance review may help teams address practices that were previously inconsistent or omitted. However, a

low baseline also allows greater numerical improvement, so the magnitude of change cannot be attributed entirely to the intervention.

Other studies demonstrated improvements in more established clinical routines. Adherence to peripheral arterial catheter standards increased from 57.0% to 74.3% (Zhou et al., 2026), and delirium-screening documentation increased from 26.5% to 65.9% (Innes et al., 2026). On-site supervision was associated with higher aseptic-technique compliance (Li et al., 2026), while standardized aspiration-prevention management improved feeding-plan adherence (Liu et al., 2026). Taken together, these findings indicate that A&F is adaptable across different clinical priorities rather than being limited to a single nursing procedure. Yet indicators varied substantially across studies, and improved documentation does not necessarily demonstrate an equivalent improvement in the quality of bedside care.

The likely mechanism involves transforming supervision from occasional observation or instruction into a repeated cycle of measurement, interpretation, feedback, and corrective action. Explicit audit criteria identify a practice gap; discussion with staff helps clarify barriers; feedback identifies achievable changes; and a subsequent audit indicates whether improvements were sustained. This interpretation aligns with the Cochrane review, which highlighted the importance of actionable feedback and local champions (Ivers et al., 2025). In the included studies, nurse champions and bedside prompts supported delirium documentation (Innes et al., 2026), while on-site teams and closed-loop feedback supported nursing performance (Li et al., 2026). However, most programs combined A&F with education, protocols, reminders, or other resources. Consequently, the separate contribution of feedback cannot be determined reliably from these designs.

Patient safety outcomes provide an additional, although less uniform, basis for interpreting clinical value. Aspiration incidence decreased from 27.72% to 13.59% in the study by Liu et al. (2026), and incontinence-associated dermatitis fell from 7.0% to 2.8% in See and Goh (2026). Wang et al. (2026) reported fewer intravenous catheter complications, but their intervention also incorporated auxiliary devices, making attribution to A&F especially difficult. Moreover, reduced oxygen and antibiotic use did not translate into a demonstrated survival benefit in the neonatal improvement project (Deorari et al., 2022). Outcome-specific measurement and adjustment for case mix are needed before drawing stronger conclusions about patient safety benefits.

All six studies assessing patient satisfaction reported favorable changes, although improvement was not comparable in magnitude or measurement across studies. Satisfaction increased from 80.35 to 92.16 in the aspiration-prevention program (Liu et al., 2026), whereas changes were smaller in settings where baseline scores already exceeded 90 (Li et al., 2026; Wang et al., 2026). A plausible explanation is that structured supervision strengthens consistency in communication, education, responsiveness, and the prevention of avoidable problems. Nevertheless, this remains an interpretation, not a demonstrated causal pathway. Some included projects did not measure satisfaction at all, and the review did not establish that the instruments or patient populations were equivalent. Future studies should use validated satisfaction measures and investigate which nursing behaviors most directly account for changes in patients' reported experiences.

For implementation, sustainability deserves as much attention as initial gains. Evidence outside the included studies shows that compliance can decline after implementation support is reduced (Aouicha et al., 2026). Within this review, projects that incorporated repeated audits, practical checklists, and workflow supports offer useful approaches for maintaining visibility of performance (See & Goh, 2026; Zhou et al., 2026). However, follow-up durations differed, and durable effects beyond the observed audit periods remain uncertain. A&F should also be delivered as supportive supervision rather than punitive surveillance. Education, collaborative problem-solving, and

respectful communication may preserve staff engagement alongside accountability. This balance is relevant because supervision has restorative as well as normative functions, while a separate supervision study did not show improved job satisfaction (Rocha et al., 2021). Staff experience should thus be assessed alongside clinical performance.

Several methodological limitations substantially constrain the interpretation of this synthesis. Eleven of the 12 studies did not have a concurrent control group, leaving trends over time, staffing changes, and other quality initiatives as possible explanations for improvement. ROBINS-I judgments indicated serious risk of bias in ten studies, particularly from confounding and outcome measurement. Seven studies originated in China, which limits confidence that effects would generalize unchanged to other organizational and resource contexts. Interventions, audit standards, follow-up periods, and satisfaction measures were heterogeneous, precluding a meaningful pooled effect estimate. The English-language restriction may also have excluded relevant evidence. Accordingly, the uniform positive direction of reported findings should be interpreted cautiously, and publication or selective outcome reporting cannot be ruled out.

For nursing management, including hospital settings in Indonesia, the results suggest a feasible quality-improvement sequence: select a small number of evidence-based nursing indicators, establish baseline performance, discuss barriers with nurses, provide timely individualized and team-level feedback, agree on specific action plans, and repeat audits at planned intervals. Nurse managers should monitor unintended consequences, including additional documentation burden and negative perceptions of surveillance, while ensuring that measurement is used for learning. These recommendations are practical implications of the synthesis, not evidence that a particular implementation model has been validated in Indonesian hospitals. Future research should prioritize multicenter controlled or cluster-randomized designs, standardized nursing-sensitive indicators, validated patient-satisfaction instruments, long-term follow-up, and cost-effectiveness evaluation.

CONCLUSION

Audit-and-feedback-based clinical supervision programs were consistently associated with better nursing care quality in hospitals, particularly compliance with evidence-based standards, documentation, and competency, and with fewer adverse events and higher patient satisfaction. The most effective programs combined explicit audit criteria, barrier analysis, individualized feedback from trusted local supervisors, education, and repeated audit cycles embedded in routine governance.

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